

## Electrochemical Power Plant for Terrestrial Flight Platforms, Phase I

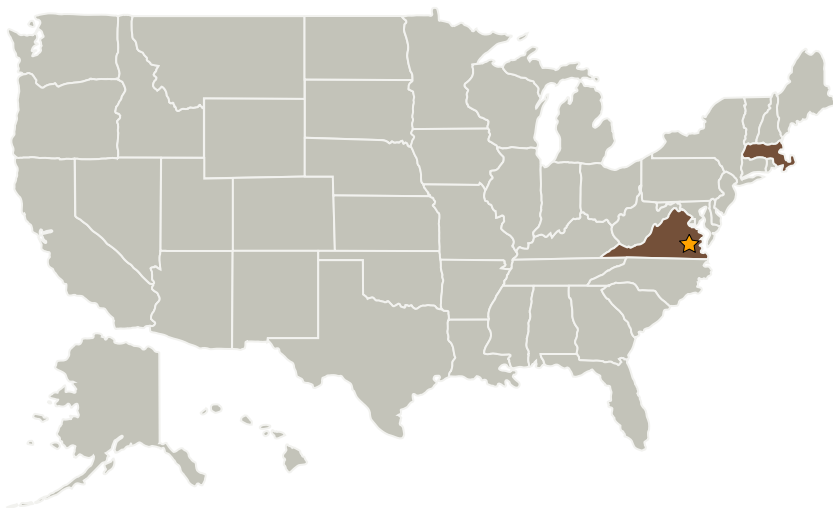
Completed Technology Project (2004 - 2004)



## Project Introduction

An electrochemical power plant is proposed by MicroCell Technologies to provide power to terrestrial flight platforms. Our power plant is based upon a proton exchange membrane fuel cell that is coupled with a hydrogen fuel supply cartridge that will provide readily scalable power levels up to 1 kW of power at 24 VDC. The hydrogen supply cartridge may be readily exchanged between missions helping to shorten the turn-around time for the flight vehicle. The design of the fuel cell power plant is based upon using hydrogen and ambient air that will operate over varying temperatures, humidity, and altitude to provide reliable power to the air vehicle. During the phase I program, we will demonstrate the feasibility of our power plant operating at a lower module wattage near 50 watts with an integrated fuel supply that will last for 12 hours. A phase II program will develop and deliver a 1000 W, 24VDC power plant that may operate for up to 12 hours.

## Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★ Langley Research Center(LaRC)	Lead Organization	NASA Center	Hampton, Virginia
Reactive Innovations, LLC	Supporting Organization	Industry	Westford, Massachusetts



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## Organizational Responsibility

**Responsible Mission Directorate:**

Space Technology Mission Directorate (STMD)

**Lead Center / Facility:**

Langley Research Center (LaRC)

**Responsible Program:**

Small Business Innovation Research/Small Business Tech Transfer

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## Primary U.S. Work Locations

Massachusetts

Virginia

## Project Management

### Program Director:

Jason L Kessler

### Program Manager:

Carlos Torrez

### Principal Investigator:

Michael C Kimble

## Technology Areas

### Primary:

- TX03 Aerospace Power and Energy Storage
  - └ TX03.2 Energy Storage
    - └ TX03.2.2 Electrochemical: Fuel Cells